Attorney Docket: [FSP]

Full Spectrum Color Projector

Abstract

Conventional displays limit their color gamut to the metamers created by a red-green-blue or cyan-magenta-yellow fixed primary space. This standard tri-chromatic, filter-based primary color space is a form of data compression that leaves out potentially critical chromatic and luminance information about a scene which a normal human would see. The tri-chromatic system also attenuates the full spectral signature of the colors (including infrared and ultraviolet) for further down-line processing. This invention overcomes those limitations by displaying the full, continuous spectra of a scene.

The resultant images displayed by this full spectral display produces images that are closer to reality for the human vision system. Colors are accurate permitting measurement throughout the entire visible spectrum. The system is a better impedance match to the human vision system, so that a viewer perceives information with less strain and more accurately. The display is more light efficient because it has no filters absorbing energy from the light source. All visible spectral information is displayed, beyond the color space limits of conventional tri-chromatic color gamut space. Furthermore, since full-spectra radiant data are retained, the system is capable of displaying infrared and ultraviolet spectra.